

DELAWARE STATE MEDICAL JOURNAL

*Owned and Published by the Medical Society of Delaware
Issued Monthly Under the Supervision of the Publication Committee*

Volume II
Number 5

MAY, 1930

Per Year \$2.00
Per Copy 20c

DUODENAL ULCER*

E. L. ELIASON, M. D.

PHILADELPHIA, PA.

Although it is only since 1900 that much attention has been paid to duodenal ulcer as shown by references in the literature, nevertheless, its existence was first noted and reported in 1817, by a Mr. Travers. This case, however, was diagnosed only after death. It was some 13 years later that John Abercrombie collected the five cases reported in literature up to that time and according to Moynihan it is to him that credit must first be given for mentioning the relation of food to pain. He remarks: "The leading peculiarity of disease of the duodenum, so far as we are at present acquainted with it, seems to be that the food is taken with relish, and the first stage of digestion is not impeded; but the pain begins about the time when the food is passing out of the stomach, or from two to four hours after a meal. Moynihan whose admirable book on duodenal ulcer is a reference work on this disease calls to mind that it was some 50 years later that Bucquoy diagnosed five cases from the symptoms alone and made the observation that the symptoms of duodenal ulcer were sufficiently precise and characteristic to enable a diagnosis to be made.

The profession today with its added aids to diagnosis have but strengthened this feeling. It is generally agreed that few diseases present the definite symptomatology and chronological sequence of the same that are characteristic of duodenal ulcer. This is so universally true that the diagnosis should be made in all but the exceptional case.

HISTORY

In all but the exceptional case, the patient's history of "indigestion" together with his physical appearance, will almost surely establish the diagnosis even before the usual laboratory aids are called upon for help. When asked if food gives him pain, he will almost invariably state that on

the contrary the taking of food relieves his pain. He further states that his pain seems to be due to hunger, as he never has it until his stomach is empty. Moynihan has coined the very significant phrase "hunger pain" for this peculiar state. For the relief obtained by the taking of food or alkali, the term "food ease" is widely used. Again we are helped in the diagnosis by the fact that these patients state that this phase of ill health is not constant but affects them periodically. They are often free of symptoms for weeks at a time only to have a recurrence of their former "indigestion" syndrome. The return is most often seasonal, spring and fall, but frequently associated with some physical or most often mental distress, hence the term "nervous indigestion," the patient often stating that he thinks his condition is the result of worry. To this group of symptoms "food ease, hunger pain, and periodicity," we have given the term "ulcer triad."

PHYSICAL CHARACTERISTICS

The patient with a duodenal ulcer is usually an adult male in the active, driving period of life. He frequently is excitable, easily worried, and often is living under some mental or physical strain. The facies often depicts this state as shown by horizontal furrows on each side of the mouth, a tense look to the jaw, and flattened cheeks. The upper jaw is often somewhat narrow and the upper median incisors project beyond the two lateral incisors. The angle of the mandible tends toward the acute type. The above is descriptive of the so-called ulcer facies. It must not be thought, however, that all ulcer cases have this lean and hungry look. Ofttimes the healthy jovial round-faced individual is a sufferer although usually not to the same extent. Physically the patient suffering with an ulcer is the lean and long type, with a very acute costal arch and a low ponderal index, that is, his weight is below a normal average for his height—the "ulcer type." Contrasting this individual with the square-jawed, round, smooth faced patient, with the four incisors on a line, a wide costal arch and a high ponderal index, one straight

[75]

* Read before the Medical Society of Delaware, October 10, 1929.

away thinks in terms of biliary disease as the most likely cause of right upper quadrant symptoms.

Many other symptoms and much data from the laboratories of chemistry and roentgenology together with history variations will be found in these cases, depending upon the period at which they present themselves for treatment. As these vary according to the pathological changes that have occurred, it will be convenient for our purpose to discuss these patients under four group headings, all of which are true surgical cases as far as treatment is concerned. The only cases of duodenal ulcer that should be treated medically with safety are those in the first attack of duodenal syndrome. Those cases that have a history of two or more periods of typical ulcer symptoms are seldom permanently benefited by diet or drugs. In this connection due consideration must be given those cases simulating ulcer, secondary to pylorospasm incident to tobacco, alcohol, etc. The surgical groups follow:

GROUP I.

Under this heading are included those patients who never have experienced in the slightest degree any digestive symptoms until the catastrophe of a perforation of the ulcer occurs. These individuals are usually young men, in the second or third decade of life, often robust and athletic. *Because of the absence of all previous symptoms*, the diagnosis is often mistaken and the patient is treated for renal colic, biliary colic, or appendicitis, and hence valuable time is lost before deciding upon operation. The following history is illustrative:

Case 1. M. B., male, 19 years old, was well until 8 P. M., December 8, 1925. As he was alighting from a street car in front of the hospital, he was suddenly seized with severe epigastric pain. He was helped into the Receiving Ward and treated for two hours as a case of "acute indigestion." He vomited once about 5 oz. of greenish fluid containing some undigested food. Two hours later he was seen by a surgeon. Physical examination showed marked rigidity of the right side of the abdomen, marked tenderness over McBurney's point and good peristalsis. The chest was normal and rectal examination negative. T. 96°, P. 96, R. 132, W. B. C. 16,900. A diagnosis of acute appendicitis was made.

Operation: Under local anaesthesia through a gridiron incision the appendix was found with a somewhat injected serosa. It was removed.

The appendiceal pathology was not considered sufficient to account for the turbid fluid and some gas bubbles that escaped from the abdomen. A diagnosis of ruptured peptic ulcer was made and the abdomen opened by a paramedian incision under local anaesthesia. Much more cloudy fluid was discovered and several bubbles of gas escaped. A large ulcer was found on the anterior surface of the duodenum just beyond the pylorus. Through a match-sized perforation in its center, gas and bubbles of fluid escaped. The ulcer was oversewed, the suture line being covered with omentum. Because the repair resulting from this oversewing of the ulcer seemed to produce a nearly complete stenosis of the duodenum, a posterior gastro-enterostomy was performed.

POSTOPERATIVE TREATMENT

These patients are given the "internal hot water bottle" before leaving the operating table. This consists of the installation of 1,000 c. c. of hot saline solution, containing 5% glucose, 2½% soda bicarbonate and fzii of tinc. of digitalis. No other fluids are given for 8 to 10 hours unless urgent need arises, due to shock or hemorrhage. The patient is placed by gradual stages in the Fowler position, when recovery from the anaesthetic has occurred. Spinal anaesthesia cases are left in situ for varying lengths of time depending upon the type anaesthetic used. The patient gets no fluid by mouth for 24 hours, although he is given mouth washes and fruit lozenges to suck and often chewing gum. Both of these measures are excellent for the keeping of the mouth moist and acting as a prophylactic against parotiditis. Morphia is given p. r. n. for pain that causes restlessness. After 10 hours fluids are administered by the Murphy drip of glucose 5% and soda bicarbonate 2% in selected cases. Hypodermoclysis of salt solution in 1/32% of novocaine may be used continuously or intermittently if occasion arises. After 24 hours fluids, beginning with hot tea with sugar and water palatably cool, are given in increasing doses. On the second, third and fourth days, broths and orange juice are allowed. On the fifth day the patient is started on a postoperative "ulcer diet" which is a modified Sippy regime without the cream. Cream does not agree with many of these patients.

Deep breathing exercises, 10 deep full inspirations demanded every hour, minimizes postoperative pulmonary complications. Changing the

position from the supine to the lateral, aids in the same direction. Vomiting is seldom troublesome; hematemesis usually is easily combatted by morphia, ice bag and a rested stomach.

Abdominal distention rarely is of moment in those cases that have gotten the digitalis in the proctoclysis. If it should occur, an enema and a simultaneous hypo of $\frac{1}{2}$ ampule of pituitrin usually obtains the desired results.

The surgical treatment of early cases varies. Resection of the ulcer is rarely advisable. Often the best treatment seems to be a cauterization of the ulcer, followed by oversewing. The question of performing a gastro-enterostomy is a matter of the operator's judgment. The state of the duodenum after the oversewing governs this to some extent. If sufficient lumen remains, the patient may often be closed without further operative work. If, in the operator's opinion, the lumen is so narrowed as to be obstructed, a posterior gastro-enterostomy is performed, provided the patient's condition and the surgeon's experience warrants the added trauma and time necessary.

The question of drainage is another which must be decided by the surgeon. No fast rule can be laid down, but a consideration of the extent of peritoneal soiling, and the character of the fluid will help in this decision. If the perforation is small, and the peritoneal soiling is confined to a small area beneath the liver, or if the fluid in the peritoneal cavity is clear and watery, even though widespread, it is often safe to close these patients without drainage. If the fluid is widespread and filled with particles of food and mucus, drainage may be the safer procedure. In practically all late cases (ruptured more than 12 hours) it is safest to drain. *When in doubt drain, as was done in each case in this series.*

GROUP II.

Here are found the cases of the chronic ulcer with recurrent exacerbations of symptoms. Pain is the most marked symptom and it is daily, occurring from one to four hours after meals. It is described as boring, gnawing, biting, stabbing, burning—is often associated with hot, aqueous and gaseous eructations, dyspepsia, and is relieved by food or alkali, magnesia, bicarbonate of soda, etc. The pain occurs with great regularity at night, usually before midnight. Later night pains in our series was associated with the large callus ulcer. Again pain may be negligible,

evinced itself merely as a distress or heavy feeling.

It is usually in the right hypochondrium, about an inch to the right and an inch and a half above the umbilicus. Sometimes it is in the epigastrium and may be referred to the back or even to the right iliac fossa. This later pain possibly is a result of the spasm of the ileo coecal valve, causing intestinal colicky pains. Excessive smoking often exaggerates the symptoms. The appetite usually remains good and the patients frequently gain weight unless they are losing blood. Melena of the occult type is very common and severe hemorrhage occurs occasionally. These patients frequently sleep fitfully and have unexplained nightmares. Routinely all the symptoms will disappear with, or even without treatment, only to recur again after a few weeks or months. In the symptom-free interval the patient usually gains weight. The following case history is typical.

Case 2. M. S., male, 43 years, began to have epigastric pain 5 years ago. The pain appeared 1 to $1\frac{1}{2}$ hours after meals, was often associated with nausea, but he never vomited. It often appeared at night, and was severe enough to waken him from a sound sleep. Food seemed to give him some relief. An internist whom he consulted diagnosed his condition as duodenal ulcer and prescribed a dietary regime which relieved his pain entirely for 6 months. Thereafter, however, at intervals, his pain would return as before. During the week before admission he experienced considerable discomfort after each meal, in spite of a restricted diet, and alkaline powders. His consultant advised operative treatment.

Xray examination: No 6 hour retention. Stomach of steer horn type but no defects were noted in its outline. The fluoroscopic and plate examination showed a constant defect in a contracted duodenal cap. A diagnosis of duodenal ulcer was made.

Operation: A large stippled ulcer was visualized about $1\frac{1}{2}$ inches from the pylorus. The ulcer was excised with a cautery, and the defect oversewed. A posterior gastro jejunostomy was performed with some difficulty because of the immobility of the stomach.

Post-operative Course: The patient did well until the seventh post-operative day when he became somewhat distended and belched frequently.

The following two days he vomited large amounts of bile-stained fluid. A fluoroscopic examination showed an obstruction of the jejunum beyond the gastro enterostomy opening. On the eleventh post-operative day a second operation was performed under spinal anaesthesia. The previous incision was opened. No evidence of peritonitis was found but adhesions had formed which obstructed both the proximal and the distal loop.

After release the loops still appeared too sharply angled at the stoma due to marked thickening of the gastro colic omentum around the opening for the anastomosis which seemed much narrowed. A gastrotomy was done and digital examination revealed the stoma narrowed to the size of the index finger. Marked oedema and induration seemed to account for this. A jejuno-jejunostomy was done and likewise a gastrotomy, passing the tube through the stomach, through the gastro jejunostomy stoma beyond the jejuno-jejunostomy into the distal loop for a distance of 10 inches, with the idea of feeding the patient and yet insuring rest of the operative site.

The day following the operation, the patient was very weak, and belched frequently. A jute tube was inserted through the nose and drained large amounts of bile-stained fluid from the stomach. For 3 days this regime was continued without marked improvement, in spite of the fact that fluids, salt solution, glucose and peptonized milk were given through the gastro jejunal tube. The patient at this time was the picture of pancreatic asthenia,—weak, with a leaky skin, slow pulse and low blood pressure. He was apathetic and complained of exhaustion, anorexia and discouragement. On the 5th day after operation, the fluid obtained from the jute tube was allowed to flow into the gastro jejunal tube to provide the patient with his normal secretions. Improvement in the patient's condition dated from this day. He rapidly regained strength, began to take food and fluids by mouth so that the jute tube was clamped entirely four days later.

The following day the jute tube was removed and the gastro jejunal tube one day later.

The patient was discharged 26 days after his first operation.

The indicated surgical treatment of the chronic non-obstructive type of ulcer is open to considerable debate, and is to be decided largely on the surgeon's ability and experience, and the conditions found at operation. When, in thin patients,

the duodenum can be easily exposed, and assistance and previous experience justify the more extensive operation, resection of ulcer or partial gastrectomy are to be considered. But when, as in this case, the operation is to be performed on a fat individual where technical difficulties are great, or when experience in intestinal surgery has not been great, it is safer to oversee the ulcer and perform a gastro jejunostomy.

GROUP III.

The patients of Group II automatically graduate into this group as the ulcerative character of the lesion becomes more chronic, fibrosed, rigid and contracted, as a result of scar tissues. The stomach meanwhile has undergone hypertrophy. When this occurs the symptoms change. The pain becomes negligible and loses its relation to food, although such foods as macaroni, cauliflower, cabbage, or rich pastries, will necessitate a dose of soda or magnesia, dyspepsia is slight and transient, food is no longer necessary at night, local tenderness disappears together with what slight rigidity may have existed. Vomiting is still absent but occasional slight and transient nausea exists. Gastric analysis frequently shows higher acid figures. The patient gains weight and finds that his upper abdomen has become more prominent. After a full meal there is a feeling of "bloating" or distention associated with gaseous eructations, sometimes excessive in amount and associated with borborygmi and much flatulence, especially before breakfast. A crawling sensation, both in the region of the pylorus as well as over the ileo coecal valve will be noticed. The xray will reveal an hypertrophied, "fighting," somewhat enlarged stomach, with a 6 hour residue, hyperperistalsis and a constricted deformed duodenum, with probably a filling defect, sometimes sufficient to warrant the diagnosis of ulcer threatening to perforate.

Exacerbation of symptoms and the appearance of a sticking or "catching" pain over the upper right quadrant indicates recrudescence of activity and should warrant the early recourse to surgery. The two serious catastrophes that happen in these cases are perforation and hemorrhage. As over 90% of said accidents occur in chronic ulcers, their very happening is evidence of neglect on the part of some one in not insisting upon operation. The fact that 20% of chronic ulcers perforate and that between 2% and 5% of patients with hemorrhage die as a result, is reason

enough for recommending operation most imperatively.

This class case gives the best results following surgical intervention, of the gastro-jejunostomy type.

Case 3, G. H., male, aged 60, is an excellent example. *Xray report:* The stomach showed almost a complete 6 hour residue. There was marked continuous hyperperistalsis, practically entirely antiperistaltic. The motility was considerably less than commensurate. There was a wide pyloric space which persisted throughout the examination. *The duodenal cap was very large* and presented a normal appearance although there was a basal cap defect.

Diagnosis: Gastro duodenal ulcer with pyloric stenosis.

Operative notes: Incision revealed an enormous stomach with thick walls. There was an ulcer one-half inch distal to the pylorus and marked cicatricial narrowing of the lumen. The ulcer was over sewed and a posterior gastro jejunostomy performed with a moderately lengthened proximal loop.

The patient had an uneventful convalescence with the exception of atelectasis of the lower lobe of the right lung. This cleared up promptly under the rolling from side to side treatment with encouragement to cough. He was discharged in excellent condition 18 days after operation.

GROUP IV.

Should the Group III cases escape perforation and hemorrhage, they automatically fall into this group. Again the picture changes and the symptoms follow the pathological change. The ulcer now has become cicatrized and the lumen of the duodenum narrowed. Adhesions bind and distort both the duodenum and the pylorus and obstruction is the dominant factor in the picture. The patient now begins to have a constant bloated, distressed feeling in the abdomen, associated with nausea, for which he soon produces emesis for relief. Loss of weight, and constipation appear, and soon vomiting occurs every second or third day. The vomitus will contain food taken the day before. Achylia, excessive thirst, a dry skin, and scanty urine make their appearance. Visible gastric peristalsis may be noted although it will be reduced in frequency. Gastric lavage reveals a stomach content of several pints. The xray shows a decompensated stomach very much enlarged, diminished peristalsis and having almost complete

24-hour retention. When a case reaches this stage the acute catastrophes of ulcer rarely occur. This group if treated surgically before dehydration and starvation has occurred, gives results nearly comparable to those of Group III. Case 4 falls into this group, having a decompensated stomach with complete retention—F. S., male, age 73.

Tentative diagnosis: Gastric neoplasm or obstructing duodenal ulcer. Gastric analysis showed marked gastric retention and achylia. Xray examination showed complete 6-hour retention. Stomach was J shaped and little or no peristalsis was visible in the fluoroscope. There was a constant defect in the region of the pylorus which did not appear in the films.

Operation: An ulcer was found just distal to the pylorus with marked cicatricial contraction of the gut. No lumen could be palpated. A posterior gastro enterostomy was performed.

Post-operative Course: The patient did remarkably well immediately following operation. At about noon of the third post-operative day he suddenly experienced severe pain in the right chest. He seemed to become suddenly weaker. T.101°, P.112, R.32, and coarse rales could be heard all over the chest posteriorly. Heart sounds were of poor quality. The following day percussion signs were present at the right base. Respiration increased steadily to 48. A diagnosis of pulmonary embolus was made. The patient died the following day.

Discussion of case: The patient is an example of a long-standing, untreated ulcer, in which the symptoms it caused were either slight or minimized and laid, as he says, to a "weak stomach." The ulcer led to cicatrix formation, which in its contraction produces gradually increasing pyloric stenosis, and in turn gastric hypertrophy and finally dilatation. No amount of medical treatment could help this patient.

When vomiting has been a prominent symptom a careful preparation for operation is necessary. Fluids in large amounts (3000-4000 c. c. per day) should be given by rectum and by hypodermoclysis, of which saline and glucose solutions are the best.

The operation is best performed by the least shocking method, and we feel that local and splanchnic or spinal anesthesia are often indicated, especially in the older patients. The operation of choice is a gastro-enterostomy since in these cases

of chronic ulcer with pyloric stenosis, this operation has given almost uniformly good results, and with a considerably lower mortality.

The pulmonary group of complications in our experience is the most common following operation for ulcer. The upper abdominal incision and tight dressings frequently employed often lead to decreased aeration of the lungs and since coughing gives considerable pain, the mucus which is formed is not expectorated, leading to bronchitis or broncho-pneumonia, when an infective organism invades or atelectasis, when the mucus plugs a bronchial branch. The prophylactic treatment has already been described.

In older patients affected with an emphysema or myocarditis, hypostatic congestion or pulmonary embolus are to be looked for in addition.

Statistics: The following data were obtained from the writer's service in the University of Pennsylvania, the Howard Hospital and the Delaware County Hospitals, where, in the last six years 152 cases of chronic duodenal ulcer were operated upon by himself and two other members of his staff. This series does not include reoperations nor cases complicated by other serious surgical conditions, such as carcinoma of the stomach, carcinoma of the gall bladder, subhepatic abscess secondary to an old ruptured ulcer, nor those cases too ill to be operated upon. It does include four cases of double ulcer.

Only 19 of the 152 cases were females. The second decade of life accounted for 20% and the third and fourth decade for 60% of the cases. Of acutely perforated cases, 9 of the 35 occurred between the years of 21 and 30, and 10 of them were between the years 31 and 40.

Pain: The most common symptom was pain. It occurred in 113 cases of the series and in all but 21 was described as of the hunger type and appeared 1 to 4 hours postcibum. In only 8 of the unruptured cases was it described as severe. It was usually spoken of as of a gnawing, dull or aching type of discomfort. In 80 of 112 noted cases, it was described as being in the right epigastrium. Pain was the first symptom in 108 of the entire series, and was stated by 60% of the cases as being relieved by food or alkali. Vomiting occurred rarely. Even in the 35 perforated cases it is noted in but 7 instances. This infrequency is significant from the standpoint of differential diagnosis from appendicitis, biliary colic and acute pancreatitis, in all of which vomiting is

a prominent finding as a rule. Hematemesis occurred in nine cases and melena in five and both in seven cases, a total of 21 in the series. Loss of weight was experienced in but 26 cases.

Periodicity or more or less regular recurrence of symptoms was definitely noted in 70%. It was stated as absent in 15 records. In another 26 it was considered absent or unnoted.

Systematic medical or dietary treatment had been given to but 28 of the patients. This is a step in the right direction and may be taken as evidence that physicians have joined the ranks with the surgeon in considering all chronic duodenal ulcers as requiring surgical treatment. When this attitude is generally accepted the unpleasant and unfortunate complications of hemorrhage, perforation and death will be greatly reduced.

The physical appearance as noted was misleading in many cases if one be inclined to expect the patient always to be of the ulcer type, as described above. Of the 112 cases in which a notation had been made, 67 were described as good, four as obese, 23 as emaciated, 17 with the ulcer facies and 10 as in shock.

Tenderness was noted as being present in 48 of the unruptured cases, and in 28 of the ruptured cases. In 13 of the latter tenderness was definitely stated as being general in character.

Rigidity was mentioned in only 14 of the unruptured cases and in 29 of the ruptured group.

X-ray examinations were done on all the chronic cases when possible. In only 11 cases was a doubtful or negative report returned in cases in which ulcer was later found at operation.

Recently xrays and a fluoroscopic examination has been made as an aid to diagnosis in the ruptured case. Such an examination will frequently reveal a fixed diaphragm with demonstrable gas beneath each dome.

Anesthesia varied widely as to type. The earlier operations were done under ether anesthesia. Until recently this was the anesthesia of choice for all perforation cases, because of the relaxation obtained and also because of the fact that many of the perforation cases were operated upon at night when an interne anesthetist, untrained in gas or ethylene anesthesia, was on duty in the absence of the professional nurse anesthetist. At a later period local anesthesia with supplementary posterior splanchnic infiltration was used. Laterally spinal anesthesia is being used more frequently.

The type of operation varied but little. In 110 of the non-perforated cases a posterior gastro-jejunosomy with plication, excision or cauterization of the ulcer was performed. In the early cases a short loop antiperistaltic anastomosis was performed but in the more recent operations a proximal isoperistaltic loop was left from four to five inches in length. This was done so as to render any future surgery on these structures of easier accomplishment in case of obstruction, marginal or jejunal ulcer. In only six were excision and a pyloroplasty performed. These were all recent cases. In the perforated cases, a posterior gastro-jejunosomy with suture of the cauterized perforation further protected by an omental flap was performed in 21 patients. Eight patients had only cauterization and suture of perforation. Only one anterior gastro-jejunosomy was done an anti-colic posterior gastro-jejunosomy is done at times.

Post operative complications were of 25 types, a few of which will be mentioned. Pulmonary complications head the list, there being six cases of broncho-pneumonia, three of lobar pneumonia, three of acute bronchitis, one of atelectasis, one of pleurisy and one embolus.

The apparent frequency of post-operative pneumonia will bear a little explanation. Exceptionally was this other than a clinical diagnosis made usually within 24 hours of death and should be classed as a terminal complication and actually should not be considered causative of death. The symptoms were those of a compression of the organ with signs of lack of aeration and consolidation. In no case was it a frank pneumonia picture clinically, i. e., chill, bloody sputum, etc. In but one instance was the clinical diagnosis confirmed by postmortem examination. Atelectasis is most probably the underlying factor in these cases.

Post-operative hemorrhage occurred in four cases, none of which, however, resulted fatally. Bilateral suppurative parotitis and subdiaphragmatic abscess each occurred once, both being in the same patient, whose ulcer had perforated 36 hours before operation. This patient recovered. Post-operative gastric tetany occurred in one patient with almost complete obstruction and daily vomiting for weeks before operation. Through an oversight an over-amount of bicarbonate of soda was administered by clysis which precipitated the attack. A hypodermic dose of 10 c. c.

of a 5% solution of calcium chloride immediately overcame the difficulty.

This mishap has served its purpose with us in that soda is withheld in all cases who have had a long period of vomiting. Their solution is 5% glucose in salt solution together with fl. dr. ii. of tincture digitalis by bowel.

Jejunal ulcer was positively demonstrated in only 1 case. This figure should probably be higher but our follow-up service did not reach some of the cases. Doubtless more have occurred. Obstruction at the opening through the gastro-colic omentum occurred in two cases. Both recovered after a second operation. One of the reported case histories gives a very interesting account of one of these patients. In both cases the stoma was constricted by reason of the excessive infiltration in the gastro-colic omentum surrounding it. Feeding by the jejunum for 10 days resulted in recovery.

There were several wound complications, including 3 severe infections, one of which was associated with scarlet fever and streptococci peritonitis. There were two cases of cerebral complication and one of heart block. Phlebitis occurred but once. Delirium tremens was present in two perforated cases. One survived despite a subdiaphragmatic abscess and the other died. The second case had been intoxicated for five days and the perforation has occurred nine hours before operation. This patient stopped breathing on the table three times and died shortly after the operation was completed.

Acute Perforation: Acute perforation of an ulcer is a terrible catastrophe. The patient experiences a sudden agonizing pain in the upper abdomen. It is so severe that in the majority of cases it results in local as well as general muscular fixation. The patient will not move as a rule, but remains "frozen" usually in the sitting position. One of this series had a perforation at his desk on night duty in an office. When found three hours later he was still seated at his typewriter leaning over with his head on the machine and his forearms doubled over and pressing upon his abdomen. Another patient had his perforation at 2 o'clock A. M. just as he sat up in bed. When seen at 6 A. M. he was in the same position, leaning over and pressing his forearms into his abdomen. This "fixation" or "frozen" attitude is characteristic and contrasts strongly with the extreme restlessness seen in renal and biliary colic, in the early

stages of acute appendicitis and to some lesser degree in acute pancreatitis. The perforated ulcer patient resents being handled or moved. Abdominal rigidity is "board" like, and because of this protection gentle palpation reveals but moderate tenderness. Later the tenderness becomes marked and often is most evident in the right iliac fossa, thus accounting for the mistaken diagnosis (2 cases) of acute appendicitis. Vomiting is not a prominent symptom. It occurred spontaneously in only seven of the 35 cases. In a few others it was induced and in neither type was it repeated.

Prostration is extreme and rapid in its appearance. Erroneously that condition has been described in the literature as "shock." It is not shock in the accepted surgical sense. Although the patient looks desperate and shows a pallor, anxious expression and a clammy skin, yet his pulse will be normal or slightly above in rate and his blood pressure will be within normal limits. This appearance was present in the records of only 10 of the 35 cases. The average temperature was 98° and the average pulse rate was between 80 and 90, the highest being 110 on admission. Blood pressure when taken usually varied little from the normal, the lowest being 110 systolic. The period of prostration lasts for a variable period, becoming less evident as the first few hours pass. Peristalsis was diminished in all cases and reported as absent in 20.

Leucocytosis was found of little help. The lowest was 4800 and the highest 20,000, the latter in a case operated upon within 2½ hours. When in doubt of the diagnosis an xray was taken. In two cases it revealed gas caps beneath the two domes of the diaphragm.

Mortality: In the series of 152 cases there were 35 cases of perforation operated under 72 hours. In the 117 non-perforated chronic cases, unassociated with other serious complicating disease, such as acute cholecystitis, pancreatitis, sub-diaphragmatic abscess, there were three deaths attributable to surgery, a mortality of 2.5%. This does not include as a surgical death a respiratory death on the table, nor a death from sudden asphyxia from aspirated vomitus five days after operation. In the 35 cases of perforated ulcer there were nine deaths, a mortality of 25%. The time that elapsed in the perforation cases had a direct bearing in most instances upon the outcome of the

cases that died, the average lapsed time between perforation and operation was 23 hours and of the recovered cases the average lapsed time was eight hours. Of course, there were a few cases who lived although operated upon in the second 24-hour period and one in the third day. Two cases succumbed although operated upon within three hours of the perforation.

In analysis of the deaths (non-perforated) it may be stated that in three of the cases an unavoidable complication was the inferential cause; one had an embolus, one an early (four days) rupture of the wound, the third an inspiration of vomitus, resulting in asphyxia.

The rupture of the wound was a result of too rapid absorption of catgut, there being no trace of suture material found in the wound at the time of rupture.

The case of death on the table also requires explanation. Death was primarily a respiratory one. After the heart action had ceased longer than five minutes, he was resuscitated with intra-cardiac adrenalin and bimanual massage by means of a hand in the abdomen and two fingers in the chest through a separate wound. The pulse returned fitfully at first and in a few moments became regular and could be counted at the wrist. Despite all efforts respiration could not be re-established although the pulse remained present actually for six minutes.

A point that is of utmost importance in the immediate results of operation is the patient's mental condition. Most of them are high strung, nervous and frankly frightened before operation. At times they will seriously state that they are going to die. I have never seen the prophecy fail. They begin their ordeal in a state of mental shock. This fright and apprehension figured prominently in two of the deaths.

Morbidity: Of the 23 ruptured cases that could be followed, 19 report themselves in perfect health.

Of the unruptured cases that were followed 92% reported themselves symptom-free.

DISCUSSION

DR. W. E. BIRD (*Wilmington*): Mr. President, I think we owe Dr. Eliason a vote of thanks for presenting so complete a paper. He leaves very little to discuss, unless it be our own cases. So far as the subject itself is concerned he has covered it more than adequately.

The point that appeals to the general practitioner most, I dare say, is the fact that in practically no abdominal condition should the diagnosis be made more accurately than in duodenal ulcer from the history alone. The history, if carefully and fully taken, is almost pathognomonic. His outline of the surgical treatment is of special interest to the surgeons, and I should say was quite conservative. I want to thank Dr. Eliason for his paper.

DR. J. G. SPACKMAN (*Wilmington*): I enjoyed the paper very much. There are one or two points I think of particular interest. Speaking of the percentage of cases which perforate, about 20 per cent, I think it is very difficult for anyone to tell who is treating a duodenal ulcer medically, putting him through a regular regime, in the absence of hemorrhage or partial stenosis. We have seen ulcers perforate when the patient was under competent medical attention, having been hospitalized for his preliminary treatment, when as far as we could see he was free from any immediate danger and was gaining weight. Also there are a certain number of cases which perforate in people of sufficient intelligence but during their convalescence they are absolutely unable to elicit any history on which you could base a diagnosis of duodenal ulcer. The ulcer perforates in a person unaware that he has persistent distress.

We reviewed our clinical histories of ulcer for the last four years ending in June of this year. During that period of time in one hospital we had fifty-six ulcers, eighteen of which were acute free perforations with a mortality of 28 per cent, and in thirty-eight chronic ulcers there was no mortality.

During this period of four years there were three very interesting conditions which I think bear mention. There was one patient who was operated upon for diagnosis of perforated duodenal ulcer who had an acute free perforation of a jejunal ulcer occurring sixty days after he had had an ulcer of the lesser curvature excised. The interesting thing was that he had pain in his left side low down, and not on his right, which I think is explained by the fact that the anastomosis after the stomach was allowed to slip backward, was upward and to the left side.

Another patient had the usual boardlike abdomen and acute free perforation.

The third case, too, came under this class, coronary disease, but the patient was the ulcer type, possibly meal distress relieved by carbonate of soda, and an hour after a meal, he had acute epigastric pain. It swung upwards into the chest, which became increasingly severe, followed by signs of distress and epigastric rigidity, one of which I saw lying on the floor in the typical ulcer attitude that he wouldn't move, with rigid abdomen. He died within a year with coronary disease.

We had a colored case with what we thought were the classical signs of acute perforated duodenal ulcer. In fact there were two of them. Both of them we found had pain due to coronary disease.

The present theory seems to be that they are mostly embolic and a normal high percentage of pulmonary disease or complications follow any gastric or upper abdominal surgery.

DR. B. M. ALLEN (*Wilmington*): I should like to ask if there is any relation apparent to the essayist between the absence of pain and the presence of vomiting of blood. The reason I ask the question is that we have recently had two patients, both of whom had no pain at any time and both showed a distinctly deformed cap, insular type. Both were operated on and the ulcer found in both cases. Both had free gastric hemorrhages and neither had any of the typical pain of duodenal ulcer. I didn't know whether it was just coincidence or not, and I wonder whether Dr. Eliason has seen it in his operations, too.

DR. ELIASON: I should like to close the discussion by answering the question of the last speaker. We saw that in two or three cases and they fall in the first group. One case was a young doctor in his twenties. While shaving in the morning he suddenly fell over in a faint, passed out of the picture, and it developed that he had a severe hemorrhage. He had never had any digestive symptoms at all.

In one case that came to our observation in the medical ward, the diagnosis was made because the man had been having frequent hemorrhages from the bowel. During the study it was found he had duodenal ulcer, but he never had had any pain, so the experience is more or less uniform, that we find a certain group of cases that have their only evidence of ulcer in the hemorrhage that occurs.

HOW SCIENCE AIDS IN CONTROLLING INFECTIOUS DISEASE*

ROBERT J. RUTH, PHAR. D.,
NEW YORK, N. Y.

Since its inception, medical science has been searching for specifics. Ideal therapy is to use a specific. Most drugs are prescribed to aid nature in overcoming disease, rather than to destroy the organism causing the disease. There are but few specifics among the drugs—quinine for malaria, arsphenamines and mercury salts for syphilis, ipecac derivatives as amebicides in treating amebic dysentery and cod liver oil for rickets.

Many diseases are infectious, i. e., caused by bacteria—pneumonia, tuberculosis, diphtheria, scarlet fever, smallpox, plague, yellow fever, tetanus, influenza, measles, whooping cough, typhoid fever, etc. With advances made in bacteriology, pathology, and immunology it has been found that many infectious diseases can be prevented or cured by the use of biological products. Biological products, with the exception of smallpox vaccine are of recent origin.

Knowledge of immunity is not new. Even centuries ago, several of the Asiatic peoples purposely transferred smallpox by such practices as wearing the clothing or sleeping in the beds of people recovering from light cases of smallpox. The Chinese transferred smallpox still more directly, collecting pus from smallpox pustules on bits of wool, etc., and placing them in the nostrils of the person who wished to contract the disease. In Turkey, a still more direct method of transferring smallpox organisms was practiced, the pus from a mild case being inserted into or under the skin.

An individual inoculated in any of these ways from a mild case was likely to have a similarly mild attack. While this did not always prove true, the risk was a slight consideration in an age when the only choice was—not whether one would contract smallpox or not—but when one would have it; under such conditions it was wiser to endeavor to contract a mild form of the disease, than to take one's chance in the next epidemic.

The Turkish method of direct inoculation was introduced into Great Britain in 1718 by an Englishwoman, Lady Montague, who had had one of her children inoculated during a short residence in Turkey. This method was continued in Eng-

land for over a century—until forbidden by a special act of Parliament, owing to the perfection of Jenner's new and more reliable method of preventing smallpox.

In our own country the inoculation method was practiced much longer, however; as late as 1863 the people of Richmond, Va., were besought by a house to house canvass to have their children inoculated that the scabs containing smallpox organisms might be collected to provide material for the inoculation of soldiers in the Confederate Army.

There was current among English dairy people the opinion that those who had had cowpox did not later develop smallpox. Acting on this idea, a farmer named Jesty, inoculated his wife and two sons with pus from a cow having cowpox (1774), and to this he attributed their later immunity to smallpox.

Real proof, however, that cowpox protects against smallpox was first given by Jenner, a doctor, who inoculated with smallpox pus, ten people who had previously had cowpox, the interval between the earlier attack of cowpox and the inoculation with smallpox ranging from nine months to fifty years. Not one of the ten contracted smallpox. For further proof, in 1796, Jenner inoculated a boy with pus taken from the hand of a dairymaid who had become infected with cowpox. Six weeks later, and again several months afterward, Jenner inoculated the boy with real smallpox pus, but both times the boy proved resistant to the smallpox thus inoculated.

The explanation accepted for the resistance to smallpox in all these instances, is that cowpox organisms are so like smallpox organisms, that the body reacts against them in practically the same way as against smallpox, and therefore, each person recovering from cowpox has in his body reacting substances that fully protect against the smallpox organisms when he is later exposed to smallpox.

During the century following Jenner's contribution to biological therapy but little progress was made in the direction of furnishing biological products as a weapon in the hands of the physician in the treatment of infectious disease. In 1894, diphtheria antitoxin became available in the treatment of that dreaded disease. During this present Twentieth Century the greatest strides in the world's history have been made in the treatment of infectious disease. Biological products

* Read before the Medical Society of Delaware, Farnhurst, October 8, 1929.

have been perfected for our most virulent and dreaded diseases. No longer do we fear diphtheria, typhoid fever, smallpox, rabies and lockjaw, as we once did—we have biological products which are specifics for their prevention or treatment. Even scarlet fever can be prevented and erysipelas can be controlled.

Of supreme importance is the proper refrigeration of biological products. To illustrate the lost potency due to improper refrigeration, if a physician were to carry smallpox vaccine points in his vest pocket for three days, assuming that the temperature would be practically that of body temperature, the vaccine would lose as much potency in those three days as it would in seven days if kept at 70 degrees F. or if kept for six months properly refrigerated. Biological products should be kept at a temperature close to 40 degrees F. Smallpox vaccine is one of the least stable of the biological products when exposed to high temperatures. However, it has been kept at a temperature of 125 degrees F. below freezing without having its potency impaired.

The United States Government exercises a careful supervision over all manufacturing biological laboratories and each manufacturer must have a government license which is signed by the Treasurer of the United States.

Every biological package bears a control number which permits the manufacturer to trace each step and detail in connection with the preparation of the product.

SYNOPSIS OF FILMS

The first reel of this film shows the liberation of toxins by bacteria, the absorption of these toxins by the blood stream, and the formation of antibodies. Use is made of animated drawings and the conventional way of depicting the toxins and antibodies is somewhat similar to that used by Ehrlich.

In illustrating the development of active and passive immunity, we have selected as an example the use of diphtheria toxin-antitoxin mixture, contrasting the prolonged immunity obtained with this product to the short duration of immunity obtained by the injection of diphtheria antitoxin.

The remaining reels show the various steps in the preparation of diphtheria toxin and antitoxin, and the methods used in the testing for potency and sterility. Emphasis is placed somewhat upon the methods employed in the concentration of antitoxin and the present-day products are compared with the less concentrated antitoxins available 10 or 12 years ago. The preparation of typhoid vaccine is also shown, and photomicrographs of the agglutination of these bacteria in the Widal test. Various scarlet fever

products are introduced briefly, and in this connection, the first horse used by Drs. Dick for the production of scarlet fever antitoxin is shown. A number of unusual photomicrographs are used, and there are views of motile typhoid bacilli and cultures of scarlet fever streptococcus, erysipelas streptococcus, tetanus bacillus, etc.

DISCUSSION

DR. JOHN EIMAN (*Philadelphia, Pa.*): That is the real danger today; if you have occasion to administer tetanus antitoxin, be sure to find out whether the child has hay-fever or hives. Be sure also whether the child has had toxin-antitoxin mixture or has been immunized at school. If he has, be double sure that you are using sheep serum, but if you are using horse serum, in that case inject the minutest possible amount intradermally and wait fifteen minutes. If the child is sensitive to horse serum, xanthocreatinin will develop within fifteen minutes. In that case the administration of the full dose may kill the child. At the same time you cannot go on and let the child die of tetanus. In that case you can administer the horse serum starting with 0.05 cc., 0.2, 0.4, 1. cc. and then the rest of it subcutaneously at two-hour intervals.

DR. RUTH: As I said, we have preparations which obviate the possibility of reactions. Regarding the chart which compares the typhoid fever record of the Spanish-American War with the typhoid fever record of the World War, it might be argued that great strides have been made in sanitation since the Spanish-American War which would account for the remarkably low typhoid fever rate during the World War. On the other hand, perhaps no American soldier has ever been subjected to more unsanitary conditions than were the men who fought in the trenches during the World War. Again it might be argued that because the Spanish-American War was fought in the tropics we would expect a great deal more typhoid fever. Yet, we had more men stationed in the tropics during the World War than we had totally enlisted during the Spanish-American War. You gentlemen know that the reason for the remarkable results as shown by the chart is that Uncle Sam immunizes every soldier, sailor and marine against typhoid fever, diphtheria and smallpox.

DR. D. W. LEWIS (*Middletown*): I should like to ask if the toxin-antitoxin often fails to immunize a patient from diphtheria.

DR. RUTH: Patients are immunized in more than 90 per cent of cases.

DR. LEWIS: It happens that I am treating a case just now, a boy nine years old, and he has had the toxin-antitoxin treatment. Pardon me, it is a girl, and she has had a very typical case of diphtheria, showing positive smears for four or five examinations. I got the first negative smear as the case was getting well, a couple of days ago, and I waited for a second before I dismissed her.

QUESTION: How long before had she been immunized?

DR. LEWIS: I don't know. She was immunized at school.

QUESTION: Then it couldn't have been more than two or three years previous.

DR. LEWIS: No, I imagine it was in the last two years.

DR. RUTH: The child probably was not given the Schick Test after receiving the immunizing injections. If she had been, the fact that she did not develop immunity would have been known. A second course of immunizing therapy could then have been given. In such individuals a second course of injections develops immunity in practically 100 per cent of cases.

DR. W. O. LAMOTTE (*Wilmington*): I think Dr. Eiman has those statistics.

DR. EIMAN: I don't have the statistics, but it is about 90 per cent which are immunized by the three injections of toxin-antitoxin; therefore, the safe procedure would be to retest, re-Schick the children who have received the three injections of toxin-antitoxin six months after the injections and then, if the Schick test is still positive, they should be given another series. It is very important to remember that 100 per cent immunization does not take place on injecting, either toxoid or toxin-antitoxin mixture, and that unless these injections are followed up by re-Schicking, in many instances the physicians and the lay people will be given a false sense of security.

Cases such as Dr. Lewis reports are by no means uncommon, but there is a way of guarding against such incidences by retesting them.

DR. LEWIS: I also want to report a case in the same family, a brother. He has been subjected to this diphtheria infection, so I gave him a thousand units and he developed a nice case of hives and severe pains in the leg and back, and a temperature up to 104, which has followed him three or four days.

DR. D. T. DAVIDSON (*Claymont*): May I inquire how accurate is the Schick test. You say that this toxoid or toxin-antitoxin will protect in 90 per cent of the cases. Will the Schick test, if repeated, show up invariably the remaining 10 per cent? Is it absolutely reliable in such small percentages?

DR. EIMAN: Dr. Davidson, the Schick test, as far as we know, is quite reliable. Remember that you are injecting 1/50 M. L. D. and the individual must present in his or her body a sufficient amount of diphtheria antitoxin in order to neutralize the action of the toxin so that a negative result will be obtained. Where the rub comes in is that different individuals react and respond differently to antibody formation. The workers in biological houses know that better than anyone else. If they pick out ten horses and inject them with diphtheria toxin, one horse will be a gold mine, producing antitoxin in high concentration, while the others may give almost none. You can bleed the high-producing horse for years and years.

DR. RUTH: You can never tell which will be the good horse. He may fool you entirely.

DR. EIMAN: Thus, it depends on the response of the body cells. There are individuals who cannot be immunized to diphtheria by one series of injections, but on reinjecting those who still show a positive Schick test after six months, many of them will become Schick negative.

DR. RUTH: This brings up the question of danger in readministering the toxin-antitoxin mixture because of the possibility of the child having been sensitized to the serum protein. In a sensitive case a second series of injections of the same toxin-antitoxin mixture will cause a reaction. To obviate that, T-A mixture from a different source should be used a second time, or the child should be tested for sensitivity.

DR. EIMAN: Naturally, there is always danger. We don't know what is going to happen after an individual has had an injection. It is one of the mysteries of medicine that some individuals become violently sensitized and the majority do not, but we can always guard against the shock by the skin test.

At any rate, anyone who is giving injections of any substances containing proteins, in however small quantities, should always carry a bottle of adrenalin in his bag and a bottle of atropin.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware. Issued about the twentieth of each month under the supervision of the Publication Committee.

W. EDWIN BIRD, M. D. EDITOR
DuPont Building, Wilmington, Del.

W. OSCAR LAMOTTE, M. D. Associate Editor
Medical Arts Building, Wilmington, Del.

M. A. TARUMIANZ, M. D. Associate Editor & Bus. Mgr.
DuPont Building, Wilmington, Del.
Telephone, Wilmington, 4368

Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

The right is reserved to reject material submitted for either editorial or advertising columns. The Publication Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: \$2.00 per annum in advance. Single copies, 20 cents. Foreign countries: \$2.50 per annum.

Vol. II

MAY, 1930

No. 5

IT STINKS

Instances of the abuse of corporation practices, in so far as their medical departments are concerned, continually come to hand. On a previous occasion we have been required to speak about the corporation physician who treats professionally, on the company's time, employees complaining of headache, toe-ache, and all the aches in between, at no cost to the employee, despite the latter's salary of \$1500 up to \$6000 and beyond. When in addition to free professional services the doctor dispenses gratuitously medicines from the corporation stock-room the pharmacist has a legitimate kick to register.

From another quarter we hear complaints about the corporation physician who gives anti-hay fever injections, etc., gratuitously to employees. By no stretch of the imagination can a corporation claim that working in their office has caused the hay fever, produced an asthma, or caused a severe anemia, yet the company's doctor (we hope unwillingly) gives serial treatments. free.

Other procedures and instances could be multiplied, but for unbridled boldness, sheer effrontery, and damnable domineering a recent experience of ours tops them all. We were consulted a short time ago by a young woman who, among other details of her history, recited the fact that a short time previously she had had a pain in her side while at work, whereupon she went up to the medical officer, who, after an examination, was dubious as to the presence of an appendicitis. Now, the good Lord knows, appendicitis is not an occupational disease, and if the company doctor had wanted to do the right thing, he would have sent the young lady home with instructions to consult the physician of her choice, or that of her parents. But he didn't do this; maybe he didn't know any better, yet we feel constrained to believe he did know the right thing to do but deliberately elected to do something else. At any rate he named a hospital of *his* choice, and then arranged for an examination there by a surgical consultant of *his* choice! The young lady had little or no option in the matter; she was sick and the question of an operation lay in the balance. Fortunately, the surgeon decided it was not appendicitis, and sent the lady home.

Now one's medical sense of the eternal fitness of things, to say nothing of the ethics involved, has reached an abysmal depth when a salaried corporation doctor usurps the patient's inalienable right of free choice of physician, even though there may have been no actual duress. Such a functionary has no moral or ethical right whatsoever to even suggest a consultant or a hospital, for the element of potential duress is always present; the present-day employee is all-too-often afraid to buck even the merest hint from the employer or his officers, for despite certain emanations from Washington, the employment picture does not have the rosy tint it ought to have.

This rank usurpation by corporate medics of the rights of free choice and of private practice has another angle: it is just one more step towards the socialization or the nationalization of the medical profession, than which no worse calamity could befall the public. Slowly, but insidiously, corporations, lodges, and associations are rendering the field of medicine less and less competitive, and unless this tide be stemmed the day of the individual private practitioner is doomed. There is one method open now that might have some retarding effect, namely: prefer charges against the

doctor who is engaged in a contract or non-competitive practice! When a few here and there are fired from their local medical society and thereby from the American Medical Association, and the companionship of their medical confreres, the others may be placed more or less on their good behavior. In the case cited above the conduct is all the more disgusting in view of the statement of the doctor, when he received the appointment, that he would assiduously endeavor not to encroach upon private practice, which he understood was the major complaint against his predecessor! Thus, when practice is so widely at variance with promise, despite the unsavory term, there is only one word that fitfully describes it—it stinks.

This year the First International Congress of Mental Hygiene was held in Washington, at which time many foreign countries were represented. These representatives were the leading authorities on the subject of mental hygiene in the various countries from which they came, some were well-known psychiatrists.

From a small beginning in 1908 to its present status, mental hygiene has made tremendous strides. One feels that Clifford Beers may well stand out as one of the leading names in medical and sociological history. His experience was not unusual but the courage with which he faced this experience and the manner in which he used it to better mankind—makes it a remarkable thing which this man has done.

Over four thousand people registered at this Congress. The meetings were divided into three groups and all were overly-crowded. Our own country has made the greatest strides in mental hygiene and all the other countries appear to be looking to the United States to take the lead in this great movement. They seem to have rather idealized the situation as it exists here today. We who live in this country realize that there are many faults which must be improved. They have been handicapped by their financial status from making such strides as we have made, but it would seem that the interest is not as general as it should be here. The average individual reads about this subject in the papers but does not consider it as a part of his own special interest. The medical profession should not leave this subject to the few, (psychiatrists, psychologists, educators), but should take an active interest in it themselves.

It was the old family physician, practising in the country, who used mental hygiene in his daily practice. The modern physician has forgotten how to do this, possibly due to the hurry of city life and to specialization. He depends more upon drugs than he does upon the mental attitude to cure his patients. The family physician was a counsellor for all difficulties; he had free access to the home; he knew each member of the family individually, their habits and their thoughts, and he could do a great deal in adjusting difficulties as they occurred within the family circle. He played not only the role of doctor but also of family advisor. We have special clinics now to take care of such, viz: Mental Hygiene Clinics. The average doctor has thrown this burden entirely off of his shoulders. Consequently, there are many adjustments not being made which could be made.

Let us hope then that the great growth of this movement will reawaken the interest of all thinking people to the needs of humanity as it now stands. The movement needs the help of each individual, and with every country in the world looking forward to the United States to see what results it will obtain, it is the duty of every professional person to take a keen interest in the movement and help it along to the best of his or her ability.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve you.

Hospital competition is a terrible thing whenever it takes one of two directions: (1) a rush into the public prints with every trivial thing out of the ordinary; or (2) a never-ending series of appeals to the public for funds. An amusing example of the former occurred here recently, when a movie of a dog, almost exsanguinated but revived by a certain intravenous injection, was shown at a certain hospital one evening and the great news was

rushed into the press the next day. The humor of the situation is apparent when you are told that the real stuff, the injection solution itself and not a picture of it, had been in use for some weeks at another hospital here, with very gratifying results, but with absolutely no fuss or feathers.

The Salisbury meeting of the Maryland Pharmaceutical Association was a very instructive one to the editor, who played a small part in their program. He was much impressed with the earnestness of the pharmacists in their endeavors to analyze and correct two of their greatest evils: the dispensing doctor and the prescribing pharmacist. Both these evils are apparently quite widespread, and apparently are quite unnecessary, except in the more remote localities. They seem to continue primarily because neither of the two professions takes enough pains to hear and analyze the viewpoint of the other.

We believe the physician and the pharmacist of the future will have more in common than in the past, in which event it is to be expected that there will be a gradual elimination of sore spots and controversial engagements, but in the meantime much good can accrue to both professions by such meetings as the Salisbury one, and especially by such get-together dinners as those given by the Q-S Club here. After all, when you get to know the other fellow you learn to like him, and when you like him you will want to work with him harmoniously. So, let's get together.

If you think the private registers of nurses are going to have easier sledding in the future, scan the following:

TO ALL NURSES, DOCTORS, PHYSICIANS, AND HOSPITALS:

The Philadelphia Record has created a Nurse's Division in its Department of Employment and Vocational Counsel in charge of Miss Marie Mahoney.

The Division of Nurses charges no fee for its services. The only possible cost to any person is the cost of newspaper listing in the nurses' column.

If you are a nurse you will find our system of service better and with no fees attached. Prepare and register with us for the busy fall and winter months.

We cannot closely estimate the chances of any individual nurse securing work and we wish no one to register with us with the confidence of *immediate* work, nor do we wish any to feel wronged should we fail to be of assistance.

If you are in need of a nurse, you will find that we are in a position to furnish nurses—graduate, under-graduate, or male, quickly, and the type of nurse that you are in need of.

Nurses should call at the Division of Nurses, Room No. 212, Record Building, and register with us.

When in need of a nurse call Walnut 2300 and ask for Miss Mahoney, and a nurse will be immediately sent you, without charge.

DELAWARE PHARMACEUTICAL SOCIETY

SALISBURY MEETING A GREAT SUCCESS

The sectional meeting of the Maryland Pharmaceutical Association, held on April 14, at the Hotel Wicomico, Salisbury, was a very successful affair. The attendance was representative of the pharmacists of Maryland and Delaware, and all the papers presented dealt with conditions actually confronting the pharmacists of the country. The meeting was presided over by George W. Colborn, Jr., of Princess Anne, and L. S. Williams, of Baltimore. Mr. Colborn is president of the association and Mr. Williams is first vice-president. The meeting began with a luncheon at 1:00 P. M., and ran until late in the afternoon. At 6:30 P. M. dinner was served, and the business continued until 10:00 P. M.

Mr. Arthur E. Williams, a member of the Dorchester County Bar, delivered an address of welcome in the absence of Mayor Wade H. Insley. Mr. Williams emphasized the growing commercial advantages of Salisbury and the Eastern Shore. In response, Mr. Colborn expressed the interest of the pharmacists in all sections of the state and of their special liking for the Eastern Shore. This was clearly shown, said Mr. Colborn, as the association was returning to Ocean City this year for its annual convention. Mr. Colborn emphasized the work of the association and of its direct value in the everyday life of the pharmacist. A continued interest was urged in pharmaceutical problems and a closer contact with the association was stressed as of great value in meeting current needs.

The following papers were presented:

Report of Legislative Committee—L. V. Johnson, St. Michaels.

The Need for a Sane Professional Policy—Aquilla Jackson, Baltimore.

How to Develop Profitable Side Lines—Elmer Sterling, Church Hill.

Problems of Running a Country Drug Store—A. S. Williams, Laurel, Delaware.

Critical Study of Chain Store Methods—L. S. Williams, Baltimore.

The Individual Druggist's Last Stand—W. B. Spire, Mt. Rainier.

The Spirit and Service of Pharmacy—Robt. J. Ruth, Phar. D., New York.

The Pharmacy As An Outpost in Legislation—W. Edwin Bird, M. D., Wilmington, Del.

The Essentials of Professional and Commercial Success—E. Stengle Marine, LL. B., Cambridge.

These papers will be published in full in succeeding issues.

Dr. Bird, in his remarks, exhorted the pharmacists to stand shoulder to shoulder with the physicians and other professional men in doing everything possible to put a stop to the spread of bureaucratic government, particularly to that malignant type of meddlesome bureaucracy which attempts to control the practice of medicine and pharmacy by the making of regulations not justified by the law nor by common sense and which are most decidedly not in the public interest so far as health is concerned. The doctor was given a rousing welcome. He speaks in a most forceful and convincing manner. His talk will appear later in this column and should be food for the serious thought of every physician and pharmacist in Delaware. And after reading it ACT by pointing out to our senators and congressmen just where the Porter and Williamson bills are detrimental to the proper practicing of the professions of medicine and pharmacy.

In an extemporaneous talk by Walter L. Morgan, of Wilmington, the basic aspects of a drug store were stressed as constituting the real bed rock of pharmacy. Mr. Morgan pleaded for a more vital realization of the professional purpose of pharmacy. Not only did Mr. Morgan urge a higher professional standard, but he urged a strict compliance with an ethical conception of the pharmacist's duty. This was urged as a basis for a closer association with the medical profession and for a fuller realization of success in pharmaceutical work.

Various speakers urged a wholehearted co-operation of pharmacists with physicians, hospitals and the activities of the State Department of Health and all public health movements.

Dr. E. F. Kelly, secretary of the American Pharmaceutical Association, spoke briefly of the forthcoming convention of that body. The great part which the A. Ph. A. had played in developing the educational and professional phases of pharmacy was reviewed. Its influence in establishing and maintaining legal standards in drugs and medicines, in advancing the prestige and influence of pharmacy in public health activities, in bringing about the necessary changes in legislation, and

in many other diverse activities of immediate practical benefit were called to mind in a very effective manner. All were urged to attend the annual A. Ph. A. convention. The business and entertainment features of the program were referred to. Due to the many associated activities which enter into the program, this meeting would be one of unusual interest.

Short talks were made by Walter Keys, Clayton, Del., president of the Delaware Pharmaceutical Society; A. S. Williams, Laurel, Del., ex-president of that body, and Robert L. Swain, of Baltimore.

Those attending from Delaware were: Walter R. Keys, Albert Dougherty, James W. Wise, Oscar C. Draper, Edward J. Elliott, Harry P. Jones, J. C. Hastings, Harry E. Culver, Marcus W. Reed, Landis E. Wilson, T. B. Hearn, Albert S. Williams, R. S. Kauffman, Walter L. Morgan, Dr. W. Edwin Bird.

WOMAN'S AUXILIARY TO MEDICAL SOCIETY OF DELAWARE

The spring meeting of the Woman's Auxiliary of Delaware was held at 12:00 o'clock Standard Time or 1:00 o'clock Daylight Saving Time on Tuesday, May 13th, at the Rehoboth Country Club, Rehoboth.

The By-Laws of the Woman's Auxiliary were voted upon at this meeting, and a delegate and alternate elected to the Detroit Convention.

Plans for the annual meeting of the National Auxiliary in Detroit, June 23-27, come on apace. The Auxiliary as an organization is occupied with only business affairs, and has nothing whatever to do with any social gatherings except the official Auxiliary luncheon. Its members are Mrs. William Gerry Morgan, D. C., Mrs. Olin West, Ill., Mrs. L. T. Harris, Mich., Mrs. Walter Jackson Freeman, Pa., and Mrs. Southgate Leigh, Va., Chairman. Mrs. Basil Loren Connelly is chairman of the Detroit committee for the convention proper, and Mrs. Burt Shurley of the social activities.

The Roof Garden of the Hotel Tuller, next to the Statler, will be headquarters for all Auxiliary business—registration, meetings, etc., and the Auxiliary luncheon on Tuesday, June 24. There will be no registration fee, but members will buy

their own luncheon tickets—\$1.50. The registration bureau will be open Monday, Tuesday and Wednesday, June 23, 24, 25, from 9-4, Thursday and Friday, June 26, 27, from 9-12. Programs, badges, etc., may all be procured here, and invitations, tickets and transportation cards must all be procured here *in advance*, as only programs may be procured elsewhere.

The meetings are open to every woman attending the convention, and under Mrs. Hoxie's leadership they are bound to be well worth the trip. There will be three morning sessions, Tuesday, Wednesday and Thursday, June 24, 25, 26. The afternoons and evenings are all left free for sight-seeing and social activities, for which many plans are in the making. Details have not yet been announced, but they include motor and boat excursions, and visits to some of the handsome private estates in the environs, including that of Mr. Henry Ford. The Detroit Museum of Art is among the best in the United States. No parties have been scheduled during business hours.

No one may represent her state in any capacity whose State dues are not fully paid. The Chairman of the Committee on Credentials and Registration is Mrs. Ledru Otway Geib, 3860 St. Clair Avenue, Detroit.

Only delegates may take an active part on the floor of the convention, but alternates should attend all sessions and hold themselves in readiness to take their delegates' place if necessary. All resolutions must be in writing and signed, and in the hands of the committee twenty-four hours before the sessions at which they are to be presented. Mimeographed copies will be distributed as the delegates take their seats. The Chairman of the Committee on Resolutions is Mrs. Augustus S. Kech, 218 Logan Avenue, Altoona, Pa.

The general program is as follows:

MONDAY, JUNE 23, 1930

2:30 P. M.—Meeting of the Board of Directors
—Statler Hotel.

TUESDAY, JUNE 24

9:00 A. M.—Registration. Auxiliary Headquarters—Hotel Tuller.

9:30 A. M.—Business Meeting.

1:00 P. M.—Luncheon, Hotel Tuller Roof Garden.

WEDNESDAY, JUNE 25

9:00 A. M.—Registration, Hotel Tuller.

10:00 A. M.—Workers' Conference.

Business Meeting, continued.

Election of Officers.

Introduction of New Officers.

Adjournment, sine die.

THURSDAY, JUNE 26

9:00 A. M.—Post-Convention Board Meeting.

10:00 A. M.—Round Table for State Presidents and Committee Chairmen.

MISCELLANEOUS

University Here Granted Charter

The University of Wilmington has been chartered under the laws of Delaware, according to an announcement made by James Adams Colby, an attorney of Boston, Mass. Proposed plans call for the establishment of a university near this city. It was stated that the institution will be small at the start and will begin by teaching only subjects which do not require expensive buildings and laboratories.

A booklet issued by the university states that a property on Silverside Road has been considered as a site for the proposed college, but has not yet been purchased. The booklet emphasizes the need for a university here, and special stress is laid upon the need for a law course.

Those announced as being interested in the university, who are not residents of this city are: James Adams Colby, of Canton, Mass.; VenNess Bates, of Cambridge, Mass.; George Demeter, of Boston; James W. Elliott, of Boston; Delbert M. Staley, of Brookline, Mass.; the Rev. Samuel Lindsay, of Brookline, Mass.; William J. Thompson, of Los Angeles, Cal.; Alfred R. Doten, of Somerville, Mass.; Caroline Atherton, of Brookline, Mass., and Dr. F. S. Alden, of Boston.

—*Every Evening*, May 5, 1930.

The average yearly net income of physicians is given by *Fordham's Magazine* for July, 1929, as follows: The rural practitioner, \$3,284; physicians in towns of 5,000 population, \$4,800; in towns of about 20,000 population, \$6,369; in cities of 50,000 population, \$7,022; and in metropolitan centers the income is \$7,125 yearly on an average. The net incomes of physicians correspond to the salaries of teachers, employees of manufacturing enterprises, and to the United States Army, Navy and Civil Service. The physician because he works as an individual has no pension to live on in his old age, and if he serves in a small community belongs in a three or six thousand dollar class, with the almost average foreman or unsuccessful sales-

man. If he practices in the larger city his net income is about on a par with that of the low assistant treasurer or the good average assistant purchasing agent. At best he is no better than a major or colonel in the army or commander or captain in the navy. He really is worse off because he cannot be retired on three-fourths pay. In commenting upon these facts the official bulletin of the *Chicago Med. Soc.* says: "The truth is that members of the medical profession have incomes no larger than do the relatively lowly employees of the corporation whose highly paid officials are making the most noise (concerning overcharging on the part of physicians)."

—*Journ. Ind. State Med. Ass'n.*

Plaut-Vincent's Infection of Vagina

CLEMENT H. ARNOLD, San Francisco (*Journal A. M. A.*, May 10, 1930), has treated twenty or more cases of Vincent's angina of the mouth. In twelve of these agranulocytosis, anemia, hemorrhage of greater or less degree, decreased blood platelets and in one case death from thrombosis have been accompanying features. Not all the patients presented these factors, but all those with sufficient fever and constitutional symptoms to be ordered to bed did so. Treatment consisted of a combination of sodium perborate as a mouth wash and buccal paste, and neoarsphenamine; in two cases sulpharsphenamine was given intramuscularly. There were no recurrences except in one case, in which the occupation of the patient (traveling salesman) made persistent treatment almost impossible. He is now well, however. All patients are advised to continue the sodium perborate for an indefinite period and to return periodically for smears. Arnold also reports a case of Vincent's disease of the vagina which followed that of the mouth. An agranulocytosis was present in this condition similar to that in other cases restricted to the mouth. The exact pathologic-hematologic-clinical relationship is not yet perfectly understood. The condition is contagious and should be given prompt and continued intensive treatment. Because of its contagiousness, patients should be partially isolated and their personal possessions, such as handkerchiefs, napkins and table utensils, kept separate and sterilized. Women are apparently more seriously affected than men. A further field for study is indicated as to the possible causal relationship be-

tween certain idiopathic agranulocytic blood states and cryptic Vincent's angina in other parts of the body than the mouth. This is the only case of Plaut-Vincent's infection of the vagina that Arnold has been able to find in the literature for the last thirty-five years. Evidence presented indicates that the fusiform bacilli and spirilla are different forms in the life cycle of one organism.

Fever of Unknown Origin

The records of 173 patients discharged from the Peter Bent Brigham Hospital with the diagnosis of fever of unknown origin were reviewed by HOWARD L. ALT and M. HERBERT BARKER, Boston (*Journal A. M. A.*, May 10, 1930), and subsequent information was obtained in 101 of them. Of forty-four patients with fever of unknown origin of less than ten days' duration, follow-up notes showed that forty-two had not developed any associated pathologic condition, and one later had mitral insufficiency and one pulmonary tuberculosis. Of fifty-seven patients who had prolonged fevers of unknown origin lasting ten days or more, no cause for the fever was ever ascertained in thirty-six of them. Of this number, two had developed new complaints and five had died of an unknown cause. A positive diagnosis was ultimately established in twenty-one patients with prolonged fever. The majority of these had tuberculosis, rheumatic infection or malignant disease.

Some Clinical Features of Air Swallowing

ASHER WINKELSTEIN, New York (*Journal A. M. A.*, May 10, 1930), asserts that air swallowing is frequently a cause of symptoms, and it occurs normally as a physiologic act. Eructatio nervosa, or functional nervous belching, occurs in neurotic individuals as a purposeful exaggeration of the normal. Belching is often a symptom in, or, an equivalent symptom of, organic gastrointestinal, gallbladder, liver or cardiovascular disease. This may be called eructatio symptomatologica. In another group, gastric pneumatosis, air is trapped in the stomach and causes gastric, respiratory and cardiac symptoms. In gastrointestinal pneumatosis, swallowed air passes from the stomach into the small and large intestine, giving rise to a new clinical syndrome, chiefly with intestinal symptoms.

Recurring Exophthalmic Goiter

Of the 878 patients with exophthalmic goiter operated on in the Mayo Clinic during the first eleven months of 1929, JOHN DEJ. PEMBERTON, Rochester, Minn. (*Journal A. M. A.*, May 10, 1930), says five died, a mortality of 0.56 per cent. Of the 1,683 patients with exophthalmic goiter operated on in the Mayo Clinic in 1920, 1921 and 1922, fifty (2.9 per cent) had returned up to Sept. 1, 1929, on account of the development of recurrent symptoms that warranted further surgical treatment. On account of this tendency to recurrence in a small percentage of patients with exophthalmic goiter many surgeons, in order to avoid recurrence of hyperthyroidism, have advocated an extremely radical operation, but Pemberton says he has never seen any convincing data submitted to demonstrate that the results of the radical operation are better than those of the conservative resection. A study of the records of 100 consecutive operations on patients with recurrent hyperthyroidism in exophthalmic goiter in whom previous operation on the thyroid gland had been done in the Mayo Clinic revealed that the average interval of time between the primary operation and the onset of recurring symptoms was five and four-tenths years, and the longest interval twenty-one years. The average interval between the first and second operation was six and sixty-six hundredths years. Of the twenty-six patients who had a recurrence within twelve months, in nine the interval of time was so brief and the onset so indefinite that it was at least suggestive that the patient never had been entirely free from the disease. Although there was growth of the remnant of tissue preserved at operation, Pemberton avers that the contention that recurrence of the hyperthyroidism of exophthalmic goiter is wholly attributable to inadequate resection of the gland and that its prevention can be accomplished by more radical resection, even to the point of the production of hypothyroidism, cannot be substantiated by the facts. He believes that the removal of from 65 to 85 per cent of the gland is adequate in a large percentage of cases and that the preservation of a posteromesial portion on each side of the trachea equivalent to from one sixth to two thirds of a normal lobe will afford ample protection against injury to the nerves and parathyroid bodies.

BOOK REVIEWS

Practical Psychology and Psychiatry. By C. B. Burr, M. D. Sixth edition. Cloth. Price, \$00.00. Philadelphia: F. A. Davis Company, 1930.

This book is essentially written for nurses and students beginning the subject of psychology and psychiatry. It is written in simple language with especially clear terminology and attends to facts rather than theories. It has been the mistake of most authors to clutter their text with so much theory that understanding becomes clogged to such students who are not accustomed to psychological and psychiatric terminologies. The writer feels that the real value of this book lies in the fact that its simplicity makes it readily understood and that the definitions are such that they cannot be misunderstood by the beginner or by the nurse who is attempting to start studying along these lines. However, in attempting to make the text clear, one wonders whether the author does not sound a trifle dogmatic in some of his statements, due to lack of explanation. In the discussion of causes of psychosis, he states that sexual excess, masturbation, and other pernicious habits may be the actual etiology of insanity, although further on in the book he states that this is a minor cause. The first impression one receives is that he feels the actual act is the cause of the psychosis rather than the poor mental adjustment to the deed. One questions whether the deed itself could cause mental derangement. Also, in his statement against the modern tendency of education in children, he fails to explain how punishment and rigid discipline should be carried on in the training of the child. Although we feel that this plays an important part in early life, it would seem that care should be used in any such procedure and that parents and guardians of children should be the first students and should thoroughly learn how to enforce discipline and punishment, as any student of the subject realizes that a great deal of harm may be done to the immature mind by such methods if they are not properly applied. However, these faults, we feel, are rather due to lack of explanation.

The book, itself, seems to be an ideal classroom book for nurses who are studying the psychiatric and psychological makeup of both normal and abnormal patients who should happen to be under their care.

MEDICAL SOCIETY OF DELAWARE

OFFICERS AND COMMITTEES FOR 1930

PRESIDENT: I. J. MacCollum, Wyoming	
FIRST VICE-PRESIDENT: John H. Mullin, Medical Arts Bldg., Wilmington	SECOND VICE-PRESIDENT: Oliver V. James, Milford
SECRETARY: W. O. LaMotte, Medical Arts Bldg., Wilmington	TREASURER: S. C. Rumbold, 1403 Market St., Wilmington
COUNCILORS	
U. W. Hocker, Lewes	Geo. C. McElfatrick, Wilmington
DELEGATES	
To American Medical Association, Dr. G. W. K. Forrest, Wilmington	Alternate, Wm. Wertenbaker, Wilmington
To Maryland State Medical Society	James Beebe, Lewes
To Pennsylvania State Medical Society	D. T. Davidson, Claymont
To New Jersey State Medical Society	C. J. Prickett, Smyrna
To New York State Medical Society	P. W. Tomlinson, Wilmington
To Delaware Pharmaceutical Society	H. M. Manning, Seaford; Edgar Q. Bullock, Wilmington; W. C. Deakyne, Smyrna
COMMITTEE ON SCIENTIFIC WORK	
W. O. Lamotte, Wilmington	Richard Beebe, Lewes
COMMITTEE ON PUBLIC POLICY AND LEGISLATION	
L. S. Conwell, Camden	Samuel Marshall, Milford
COMMITTEE ON MEDICAL EDUCATION	
Harold Springer, Wilmington	I. Lewis Chipman, Wilmington
COMMITTEE ON CANCER	
Harold Springer, Wilmington	Geo. F. Jones, Georgetown
H. V. P. Wilson, Dover	James Beebe, Lewes
W. O. LaMotte, Wilmington	Geo. C. McElfatrick, Wilmington
COMMITTEE ON HEALTH PROBLEMS IN EDUCATION	
W. P. Orr, Lewes	C. A. Sargent, Dover
F. F. Armstrong, Wilmington	
COMMITTEE ON NECROLOGY	
Willard Springer, Wilmington	P. W. Tomlinson, Wilmington
COMMITTEE ON PUBLICATIONS	
W. E. Bird, Wilmington	M. A. Tarumianz, Farnhurst
COMMITTEE ON HOSPITALS	
O. V. James, Milford	H. V. P. Wilson, Dover
Delegates to the U. S. Pharmacopoeial Convention	
W. F. Haines, Seaford	Joseph McDaniel, Dover
Alternates: H. M. Manning, Seaford	C. G. Harmonson, Smyrna

NEW CASTLE COUNTY MEDICAL SOCIETY—1930

Meets the Third Tuesday

DR. ROBERT W. TOMLINSON, *President*, Wilmington.
 DR. LEWIS BOOKER, *Vice-President*, New Castle.
 DR. DOUGLAS T. DAVIDSON, *Secretary*, Claymont.
 DR. LOUIS S. PARSONS, *Treasurer*, Wilmington.
 Delegates: J. W. Bastian, W. Edwin Bird, Lewis Booker, I. L. Chipman, G. W. K. Forrest, Dorsey W. Lewis, George C. McElfatrick, John Palmer, Jr., Louis S. Parsons, Harold L. Springer, P. W. Tomlinson, Joseph P. Wales. Alternates: Olin S. Allen, Douglas T. Davidson, T. H. Davies, Lawrence J. Jones, William V. Marshall, Meredith I. Samuel, Brice S. Vallett, George W. Vaughan, William Wertenbaker.
 Board of Directors: Robert W. Tomlinson, D. T. Davidson, M. A. Tarumianz, L. Heisler Ball, Ira Burns.
 Board of Censors: G. Burton Pearson, J. M. Barsky, James W. Butler.
 Program Committee: Lewis Booker, Robert W. Tomlinson, D. T. Davidson.
 Legislation Committee: G. W. K. Forrest, J. D. Niles, V. D. Washburn.
 Membership Committee: George W. Vaughan, L. J. Jones, G. C. McElfatrick.
 Necrology Committee: E. R. Mayerberg, Olin S. Allen, A. L. Heck.
 Nomination Committee: Paul R. Smith, James G. Spackman, William Wertenbaker.
 Audits Committee: B. M. Allen, J. A. Shapiro, Willard E. Smith.
 Radio Committee: A. J. Strikol, Seth H. Hurdle, J. D. Niles, George W. Vaughan, V. D. Washburn.

KENT COUNTY MEDICAL SOCIETY—1930

Meets the First Wednesday

DR. C. A. SARGENT, *President*, Dover.
 DR. OGBURN, *Vice-President*, Dover.
 DR. C. B. SCULL, JR., *Secretary-Treasurer*, Dover.
 Censors: Dr. W. C. Deakyne of Smyrna, 1930; Dr. J. W. Martin of Magnolia, 1931; Dr. S. M. D. Marshall of Milford, 1932.
 Delegates: Dr. L. S. Conwell of Camden, 1930; Dr. J. S. McDaniel of Dover, 1931; Dr. Joseph Bringhurst of Felton, 1932.
 Alternate: Dr. Willard R. Pierce of Milford.

SUSSEX COUNTY MEDICAL SOCIETY—1930

Meets the Second Thursday

W. F. HAINES, *President*, Seaford.
 K. J. HOCKER, *Vice President*, Millville.
 G. FRANK JONES, *Secretary-Treasurer*, Georgetown.
 Committee on Entertainment: Bruce Barnes, G. Frank Jones, U. W. Hocker.
 Visiting Committee: W. F. Haines, Robert Hopkins, K. J. Hocker.
 Committee on Nominations: U. W. Hocker, O. V. James, H. M. Manning.

DELAWARE STATE BOARD OF HEALTH—1930

W. P. Orr, M. D., *President*, Lewes; Mrs. Charles Warner, *Vice-President*, Wilmington; Robert Ellgood, M. D., *State Road*; Willard R. Pierce, M. D., *Milford*; Mrs. Donald S. Ashbrook, *Wilmington*; Margaret Handy, M. D., *Wilmington*; C. R. Jeffries, D. D. S., *Wilmington*; Arthur C. Jost, M. D., *Dover*; Executive Secretary and Registrar of Vital Statistics.

DIVISIONS

Child Hygiene, Cleland A. Sargent, M. D.; Sanitation, Richard C. Beckett, B. Sc.; Laboratory, Roland D. Herdman, B. Sc.; Brandywine Sanitarium, Lawrence D. Phillips, M. D. and Edgewood Sanitarium, Conwell Banton, M. D.

DELAWARE PHARMACEUTICAL SOCIETY—1930

WALTER R. KEYS, *President*, Clayton.
 JAMES T. CHALLENGER, New Castle, HEWITT K. MCDANIEL, Dover, GEORGE E. SWAIN, Georgetown, *Vice Presidents*.
 ALBERT DOUGHERTY, *Secretary*, Wilmington.
 PETER F. BIENKOWSKI, *Treasurer*, Wilmington.
 Board of Directors: Walter R. Keys, James W. Wise, George W. Rhodes, Albert S. Williams, Walter L. Morgan.

ord

ton

ton

wes

ont

rna

ton

rna

ver

ton

rna

ord

ton

urst

own

ord

rica

ton

ton

ton

ton

ton

nes,

J.

M.

ner,

late

S.

ion;

D.,

s.

tion,

nan,

D.

.

.

.

HTEL,

.

orge